

PATENT
Serial No. 10/646,018
Docket No. JSF01-0054D1/WJT08-0005D1

IN THE CLAIMS

Please amend the claims to read as follows:

1. (Currently Amended) A phase shifter comprising:

 a substrate;

 a tunable dielectric film having a dielectric constant between 70 to 600, a tuning range of 20 to 60 %, and a loss tangent between 0.008 to 0.03 at K and Ka bands, the tunable dielectric film being positioned on a surface of the substrate;

 a coplanar waveguide positioned on a surface of the tunable dielectric film opposite the substrate;

 an input for coupling a radio frequency signal to the conductive strip;

 an output for receiving the radio frequency signal from the conductive strip;

 a connection for applying a control voltage to the tunable dielectric film, wherein the connection for applying a control voltage to the tunable dielectric film comprises:

 a first electrode position adjacent a first side of said conductive strip to form provide a first gap between the first electrode and the conductive strip; and

 a second electrode position adjacent a second side of said conductive strip to form provide a second gap between the second electrode and the conductive strip; and

 a conductive dome electrically connected between the first and second electrodes.

2. (Original) A phase shifter according to claim 1, wherein the high dielectric constant voltage tunable dielectric film comprises a barium strontium titanate composite.

3. (Original) A phase shifter according to claim 1, further comprising:

 a first impedance matching section of said coplanar waveguide coupled to said

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input; and

a second impedance matching section of said coplanar waveguide coupled to said output.

4. (Original) A phase shifter according to claim 3, wherein the first impedance matching section comprises a first tapered coplanar waveguide section; and

wherein the second impedance matching section comprises a second tapered coplanar waveguide section.

5. (Currently Amended) A phase shifter according to claim 1, further comprising:

a third electrode position adjacent a first side of said first electrode opposite said conductive strip to ~~form~~ provide a third gap between the first electrode and the third electrode; and

a fourth electrode position adjacent a first side of said second electrode opposite said conductive strip to ~~form~~ provide a fourth gap between the second electrode and the fourth electrode.

6. (Currently Amended) A phase shifter according to claim 1, wherein the substrate comprises one of:

MgO, LaAlO₃, sapphire, Al₂O₃, and a ceramic.

7. (Original) A phase shifter according to claim 1, wherein the substrate has a dielectric constant of less than 25.

8. (Original) A phase shifter according to claim 1, wherein the tunable dielectric film has a dielectric constant of greater than 300.